ISSN 2394 - 2053 (Print)
ISSN 2394 - 2061 (Online)
RN: 143216 (RNI)
www.ojpas.com

REVIEW ARTICLE Open Journal of Psychiatry & Allied Sciences

# Psychological ramifications of detraining effects in sportspersons amidst the COVID-19 pandemic: a consensus compendium

**Abstract**

The coronavirus disease 2019 (COVID-19) pandemic has caused a negative impact globally, affecting various domains of life, including the fields of outdoor sports and athletic activities. The postponement or cancellation of outdoor sports and athletic activities has resulted in detraining effects in sportspersons. These detraining effects may result in a myriad of effects on physical health, mental health, and also, cause loss of opportunities, financial concerns, and disruption in non-sporting activities. This review article highlights the possible detraining effects, psychological consequences on sportspersons, and certain interventions which may help in mitigation of these effects during the pandemic and in its aftermath.

**Keywords:** Quarantine. Isolation. Athletes. Teleconsultations.

**Jerrin Shaji Kizhakkekara[1], Shijo John Joseph[2], Guru S Gowda[3]**

*[1]Department of Sports Medicine, Armed Forced Medical College (AFMC), Pune, Maharashtra, India, [2]Department of Psychiatry, Sikkim Manipal Institute of Medical Sciences (SMIMS), Sikkim Manipal University (SMU), Gangtok, Sikkim, India, [3]Department of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, Karnataka, India*

**Correspondence:** Surg. Lt. Cdr. (Dr.) Jerrin Shaji Kizhakkekara, Resident, Department of Sports Medicine, Armed Forces Medical College, Pune, India. PIN: 411040. drjshaji.k@gmail.com

**Received:** 20 July 2020
**Revised:** 3 August 2020
**Accepted:** 4 August 2020
**Epub**: 7 August 2020
**DOI:** 10.5958/2394-2061.2021.00008.2

## INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic has caused havoc globally in various realms of life. This has called for vigorous action to address the global crisis, which is of importance to psychiatry and its allied fields.[1] The World Health Organization (WHO) advised to restrict travel or trade to countries experiencing COVID-19 outbreaks. This move was essential to break the chain of transmission and safeguard public health.[2] So, major events such as the Tokyo 2020 Olympic and Paralympic Games, the Indian Premier League, and several others have been postponed almost indefinitely or cancelled in this pandemic.[3,4] This has led to a significant impact in the fields of outdoor sports and athletic activities. Several sportspersons have placed themselves in home quarantine or isolation may be for the first time in their lives. There may be a myriad of effects on these individuals including physical health issues, mental health issues, loss of opportunities, financial concerns, disruption of non-sporting activities, especially for those who pursue their parallel careers in academics, business, or other avenues. From a general point of view, sportspersons have been victims of psychological issues including depression, anxiety, eating and sleep-related disorders, attention-deficit/hyperactivity disorder (ADHD), and stress-related to overtraining, personality issues, bullying and hazing, even in the normal times.[5] In this brief review, the authors have made an attempt to muster a range of possible psychological and detraining consequences as a result of the pandemic and interventions to tackle these issues.

## DETRAINING EFFECTS ON SPORTSPERSONS: IMPACT ON PHYSICAL HEALTH AND PERFORMANCE

Detraining is "the partial or complete loss of training-induced adaptations, in response to an insufficient training stimulus". It depends on the period of training cessation or insufficient training which would have a detrimental impact on various systems, mainly cardiovascular and musculoskeletal systems. There is already awareness that long-term detraining, as for the current COVID-19 scenario, would cause a significant reduction of the maximal oxygen consumption ($VO_2$ max), depreciation of the recently developed gains in terms of endurance capacity, and also, remarkable deprivation of muscle strength and bulk.[6] The detraining effects may become worse in cases where access to adequate facilities, access to proper nutrition and diet have been compromised.

Depletion in skeletal muscle activity would lead to a rise in the risk of injuries both in non-contact as well as contact sports like soccer.[7] Detraining effects would definitely lead to emergence of psychological issues or exacerbation of earlier issues during this trying time of the pandemic.

## PROBABLE PSYCHOLOGICAL CONSEQUENCES ON SPORTSPERSONS DURING THE PANDEMIC

The pandemic has caused uncertainty in the lives of individuals and caused a negative psychological impact on persons all over the globe. Sportspersons too would have been similarly affected in this scenario. The repercussions of quarantine/isolation comprise of the lack of structured training and competition, deficient communication of athletes with their peers and coaches, restriction in free movement, reduced exposure to sunlight, and unprofessional training conditions which they have to adjust to.[8] Disrupted training leading to detraining effects, reduced physical activity in general, separation from their respective teams or sports communities, reduced interaction with coaches or trainers, and relative disruption of social support which comprised of fans, fan clubs, institutions, media, and fitness centres may lead to psychological issues in them.[9] They may be affected by the fear of themselves or their family members contacting the infection, loneliness and boredom secondary to the physical and social restrictions of lockdown, and anxiety regarding physical revival and pandemic-related information. Apart from these, they may become victims of depressive symptoms, mood disturbances, disturbed eating and sleeping patterns, adjustment issues in new settings, obsessive-compulsive disorder, and acute stress (in those testing positive).[10,11] There may be cases of use of substances or a relapse especially if poor coping strategies are being utilised to deal with psychological concerns. Certain athletes who are affected by the enduring effects of the pandemic may have long-term mental health issues such as posttraumatic stress disorder. Detraining effects would lead to loss of confidence, reduced self-esteem, acute stress reaction, anxiety, depression, and the enduring effects on the mental health of sportspersons.[12] Those who had previously been diagnosed or treated for mental health disorders may have an exacerbation/worsening or a relapse, which can be due to the existing stress or difficulty in following up for treatment or getting access to treatment.

## INTERVENTIONS AND MITIGATION STRATEGIES

Interventions for dealing with the aforementioned issues are necessary for sportspersons to not only survive through the current pandemic but, also, to deal with issues in the post-pandemic era as sports and game-related events would not be able to restart soon in the same way as before. Currently, as most of the sportspersons may be residing at their homes, it would be difficult for them to have direct or the usual interventions. Interventions should focus on the physical domain, sports-related domain, social domain, psychological domain, and be holistic in nature. These interventions need to be planned in such a way that the individuals themselves, team members, the interdisciplinary team, sports governing bodies as well as the government is brought into action. Awareness regarding mental health issues and physical concerns should be made available to individuals as well as at other levels. It may be performed by concerned authorities or sports boards/committees even if the individuals are at home using the help of video conferencing platforms or other digital-based applications. Periodic support group discussion can be facilitated for sportspersons as well as support staffs. The support group should identify and address key issues of the sportspersons, and help in player's individual growth.[13] Support group can also plan for training on healthy adaptive coping strategies for the sportspersons through the support of existing mental health professionals. This time of forced isolation is a time for introspection on the past mistakes, analyse the present opportunities, and reset priorities for a bright future. Individuals also need to be encouraged to keep in touch with their trainers, coaches, and team members through telephone, text messaging applications, and video conferencing platforms. Those who have psychological issues, can liaison with mental health professionals or sport psychologists through teleconsultations or national helplines.[14] The following interventions may play a vital role to support sportspersons during the pandemic:

### Psychotherapeutic interventions

Athletes have almost an equal probability of developing mental health illnesses like the general population.[15] Particularly depression is considered to equally affect athletes and non-athletes; however, in athletes, it can be sparked by peculiar factors such as poor training, over-training, or retirement. Psychological first aid may be provided to those acutely affected with mental health issues. Techniques such as body scan, deep breathing, and relaxation techniques may be recommended to affected individuals as they are easy to follow.[12] Individuals who have psychological mindedness may be intervened with cognitive behavioural therapy (CBT), supportive therapy, mindfulness-based interventions, and meditation-based yoga.[15,16] Powerful mental tools like meditation and autogenic training are useful for stress and anxiety management.[17] It has been found that the use of mental and motor imagery is useful in preventing detraining effects as well as in rehabilitation by activating certain brain areas associated with actual training, even in the absence of the physical stimulus.[18] Group therapy and family therapy may be useful based on the presentation of psychosocial symptoms. Providing psychotherapeutic interventions to athletes may become difficult and challenging at times because of certain traits they possess, such as aggression and narcissism, and their level of psychological mindedness for these interventions.[15]

### Balancing physical health and sport endurance

#### Minimalist training

Maintenance of fitness by using minimal equipment and facilities may be ensured by using the following methods:

***Elastic resistance bands***

It is a cheap and effective way to maintain muscular strength and flexibility by using colour-coded bands of varying resistance.[19]

### *Plyometric training*

These are exercises utilising the stretch-shortening cycle like variations of box jumps, depth jumps, bounding exercises, etc., especially useful in the maintenance of power and explosive strength for upper and lower body, but with due precautions.[20]

### *High intensity interval training (HIIT)*

It consists of high-intensity exercise bouts interspersed by a rest period between exercises (e.g. 30 seconds of high-intensity activity, followed by 30 seconds of rest, repeated for a total of seven minutes). It is helpful in maintaining or enhancing cardio-respiratory fitness.[21]

### *Body weight training (calisthenics)*

It is any exercise that involves using the body as a means of resistance to perform work against gravity. This involves the minimum use of the equipment and has to be progressive in nature to achieve fitness goals.[22]

### *Tele-workouts*

This is similar to telemedicine in which coaches or fitness trainer can prescribe and monitor workouts using digital interfaces like smartphones, tablets, or laptops.

## Maintaining social connectedness

### *Social bubbles*

These are limited social contacts beyond household who are maintained and allowed to breach physical distancing measures without substantially increasing the risk of transmission if managed properly.[23] This may satisfy the needs of the athletes to engage in practice like in combat sports or team sports where a partner is a must for training.

### *Connectivity, learning, and entertainment*

The use of newer video calling apps helps staying connected with near and dear ones. Massive Online Open Courses (MOOC) learning platforms are useful in spreading knowledge and utilising the extra time. Social networking platforms are a boon; although they can be addictive if misused.

### *Connecting with the community*

Athletes as a community must take active initiatives to connect with alike individuals facing homogenous sets of problems and find common solutions customised to the context.[24] This connectivity can be definitely augmented by the use of technology including video conferencing platforms and other digital applications.

# EPILOGUE

Studies on physical, psychological, social, and ecological aspects of sportspersons' health are limited especially with relation to the current pandemic. There is need for further studies in general and specific to pandemic focusing on evidence-based interventions. Future research should focus on detraining effects, physical and psychological concerns of athletes from different sport domains, cultures, and countries.

The impact of the pandemic on sportspersons' health need special attention. Services from mental health professionals need to be utilised by concerned sports authorities to ensure positive mental health and support for sportspersons. The rising popularity of telepsychiatry consultations can add on to manage psychological issues in an effective manner.[25] There is an urgent need to develop preventive and promotive measures to reduce the morbidity associated with detraining effects on individuals with the support of sport authorities and policy makers. Digital-based platforms can be used for support of sportspersons and support staff during the pandemic and also, in the aftermath.

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**Source of support:** Nil. **Declaration of interest:** None.